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The Corcoran Charts a New Course
A Rooftop Renaissance on Meridian Hill
Deft Distractions in a Children's Medical Facility

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Rotunda in the Corcoran School of the Arts & Design, as renovated by LEO A DALY.

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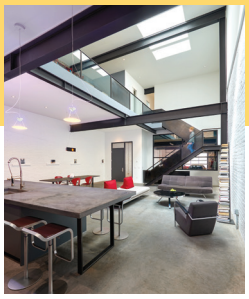

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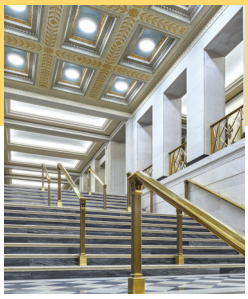

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ON THE COVER: Front of the AUTO-Haus, by KUBE Architecture
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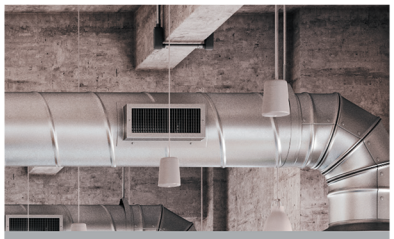
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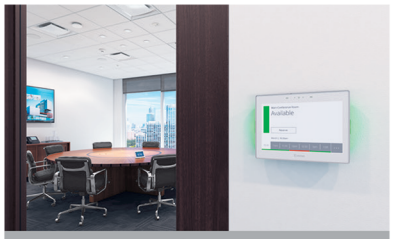
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THE RULES OF THE GAME ARE CHANGING

Bradley W. Johnson

pop….thwok!
pop….thwok!
pop...thwok!
THUD!

That's a partial transcript of my first squash lesson at Squash on Fire—the thud was me running into the wall.

Frequent readers of *ARCHITECTURE**DC*** will recall the building that houses Squash on Fire, by TEN Arquitectos with WDG Architecture, which was profiled in—and featured on the cover of—our Fall 2018 issue. I accompanied the writer of that article (my husband) when he visited the building to see it first hand, and during the visit, I expressed an interest in learning to play. A gift certificate for an initial lesson appeared under the tree at Christmas, and I recently cashed it in. Following that lesson, I've got a few aches in places where I didn't know I had muscles—but I think I'm hooked on the game, and I'm looking forward to future visits.

WELCOME

Squash on Fire isn't the only place we have returned to after first learning about it in the course of preparing the magazine. The Mt. Pleasant restaurant Beau Thai (Foundry Architects), which appeared in the Fall 2014 issue in an article authored by Denise Liebowitz—who we are pleased to report has resumed writing for us, starting with this issue!—has become a favorite place of ours for weekend lunches. And the nearby Mt. Pleasant Library (CORE architecture + design), which was featured in the Winter 2013 issue, is a frequent stop for us, as well. It's great to go back and remind ourselves why the places we have featured were worth all the attention.

AIA|DC, like some other AIA chapters around the country, has recently done something similar with our design award program: We revisited the criteria for those awards, to make sure they're keeping up with the demands of our changing world, and we asked ourselves some questions. For example, if a building is aesthetically pleasing—in other words, if it just plain looks good—is that really enough? To be considered worthy of awards, shouldn't projects also be resilient, promote health, and improve the community?

A few weeks ago, AIA|DC's board voted unanimously to adopt the following ten measures that will be considered by all our award juries beginning in 2020:

1. How well is sustainability integrated into the design?
2. How will the community benefit from the project?
3. How were natural ecosystems considered?
4. How was water conservation considered?
5. Was the project cost-effective?
6. Does the project conserve energy?
7. Does the project promote wellness?
8. Are resources optimized within the project?
9. Is the project resilient and adaptable?
10. What lessons were learned from this project's design and how were they shared?

That's a lot of consider, but if AIA is to remain relevant in a time of climate crisis, as young Greta Thunberg reminds us, and if architects are to fulfill their potential for being powerful engines for solving difficult societal challenges, our best work needs to be more than just beautiful—it needs to be world-changing. The addition of these new award criteria is one way to put AIA on that path.

As always, we love hearing from you, so please send your comments and let us know how we are doing.

Mary Fitch, AICP, Hon. AIA
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Ronald O'Rourke ("Parking/Space" and "Rooftop Renaissance") is a regular contributor to *ARCHITECTURE**DC***. His father, Jack O'Rourke, was an architect in San Francisco for more than four decades.

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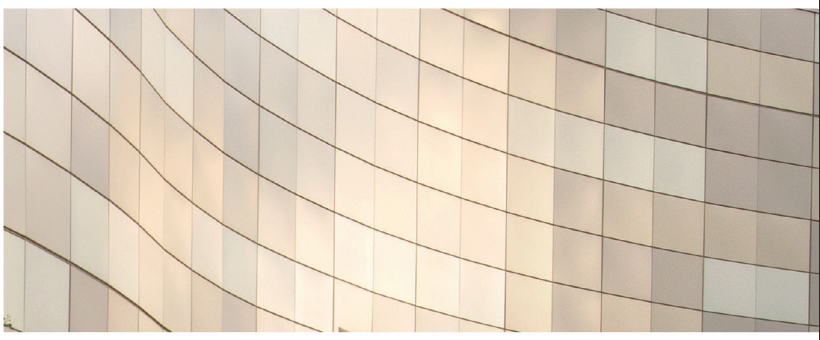

Health Partners Neuroscience Center – St. Paul, MN
Architect: BWBR Architects

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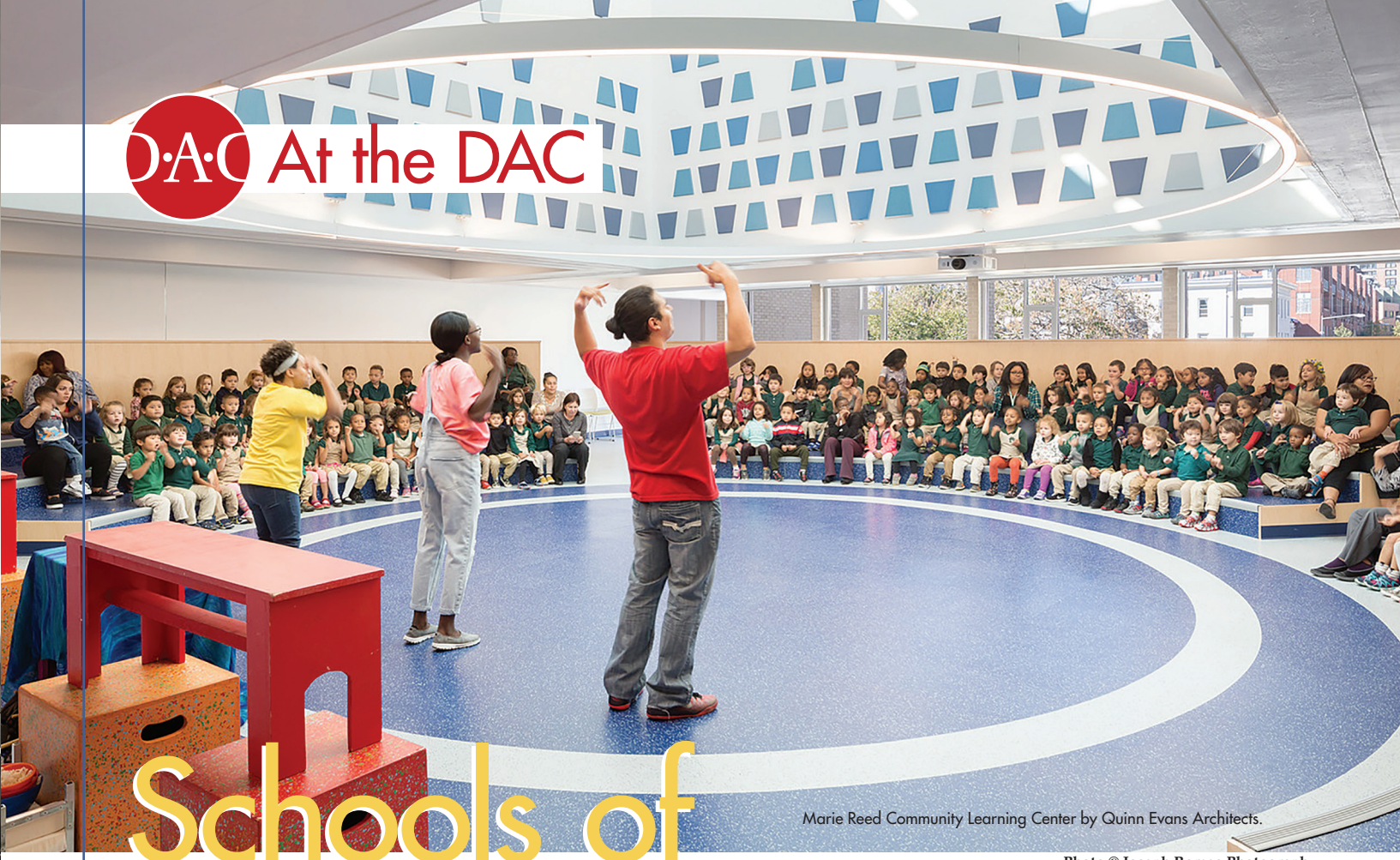

Marie Reed Community Learning Center by Quinn Evans Architects.

Photo © Joseph Romeo Photography

Schools of Thought: DC's New Generation of School Buildings

November 12, 2019 – January 31, 2020

Over the last decade, the District of Columbia has made a substantial investment in modernizing its public school buildings, and the city's public charter schools and private schools have also made major investments in their facilities.

The design of these new and renovated schools has moved the architecture of learning spaces well beyond the basics of traditional school design. Like DC's widely praised new public library buildings, these modernized school buildings employ innovative architecture to better achieve their mission.

What prompted the District's school rebuilding effort? What difference does good school design make for student learning? And what design features do the city's new school buildings incorporate? This exhibit explores these questions by looking at 19 of the District's modernized public, public charter, and private schools.

Gallery Hours

Monday–Wednesday: 10am–7pm
Thursday–Friday: 10am–5pm
Saturday–Sunday: Closed

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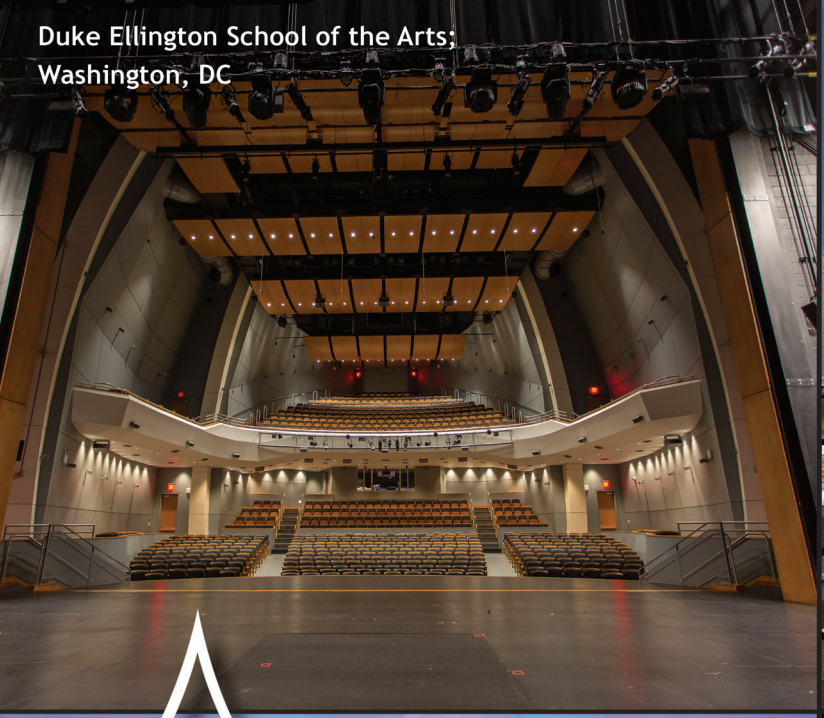
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-J. Mark Wolf, AIA, Vice President, JHP Architecture

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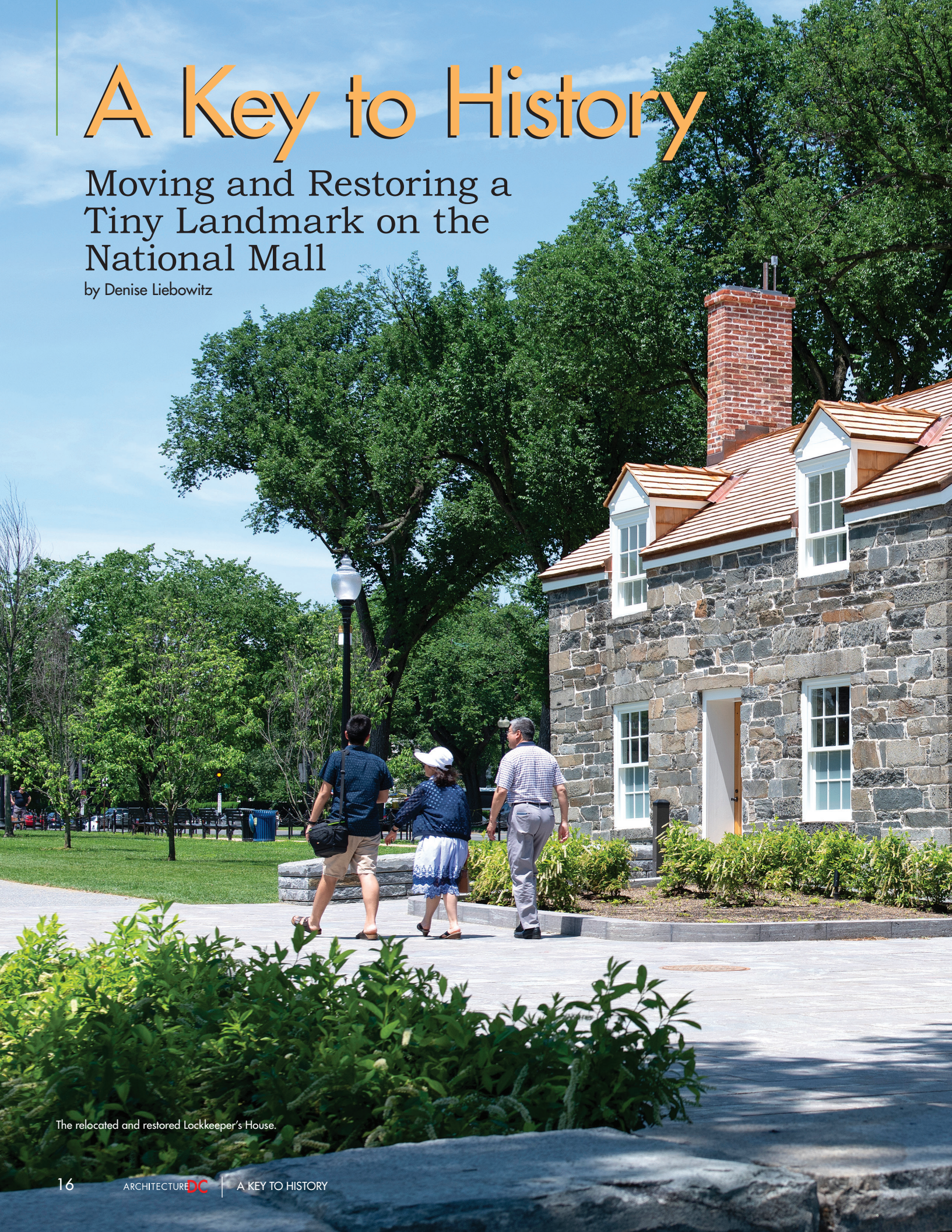
A Key to History

Moving and Restoring a Tiny Landmark on the National Mall

by Denise Liebowitz



The relocated and restored Lockkeeper's House.

Project: The Lockkeeper's House,
17th Street and Constitution Avenue, NW, Washington, DC

Architects: **Davis Buckley Architects and Planners**
Landscape Architects: **PWP Landscape Architecture**
Lighting Designer: **Claude R. Engle**
Structural Engineers: **1200 Architectural Engineers**
MEP Engineers: **Henry Adams**
Civil Engineers: **Weidlinger Associates**
General Contractor: **Hensel Phelps**

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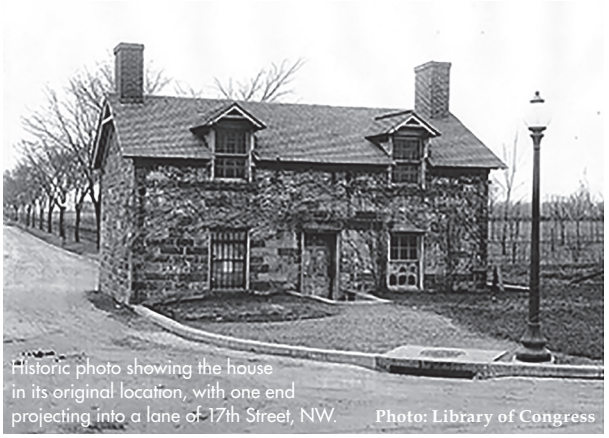


Historic photo showing the house in its original location, with one end projecting into a lane of 17th Street, NW. Photo: Library of Congress

Landlocked on the National Mall at the intersection of 17th Street and Constitution Avenue, NW, sits an old stone cabin that recalls the early days of Washington and the network of canals and rivers that defined the city's commercial life.

Originally envisioned by George Washington and Pierre Charles L'Enfant, the Washington City Canal opened in 1815 and was intended to develop local markets and secure the city's position as a hub of commerce and transportation. The canal flowed from the Anacostia River towards the Capitol, crossing the Mall to join the Potomac just south of the Executive Mansion (later known as the White House). Barges loaded with coal, food, and stone for public buildings plied its waters. By 1833, an extension connected the Washington City Canal to the Chesapeake and Ohio Canal, and where they joined at the present-day corner of 17th and Constitution, a lockkeeper managed traffic, kept the records, and operated the locks. This tiny stone structure was built to house the lockkeeper and at least some of his purported 13 children.

The canal's heyday was brief. Overtaken by a rapidly growing and more efficient national rail network, plagued by financial woes, and increasingly polluted with sewage and trash, the Washington City Canal closed to barge traffic in the 1850s and was eventually filled to make way for what would become Constitution Avenue. The Lockkeeper's House, without its canal, was left stranded on the Mall as the only reminder of those earlier civic and commercial aspirations. The abandoned building soon became a squatters' destination, was repaired in 1903 to become a jail for the Park Police, later altered to serve as a public restroom and storage building, and finally sat vacant for more than 40 years.

The National Park Service, the Trust for the National Mall, and PWP Landscape Architecture have now collaborated to bring new purpose to the 350-square-foot structure, preparing it to serve as the gateway into the rehabilitated Constitution Gardens now being planned.

Tapped to join the team was **Davis Buckley Architects and Planners**, a Washington firm widely recognized for its historic preservation expertise and

South façade of the restored house, with universally accessible entrance.

experience in creating iconic civic and commemorative spaces such as the National Law Enforcement Officers Memorial, the National Japanese American Memorial to Patriotism during World War II, and the National Law Enforcement Museum.

"We had a wonderful collaboration with our partners on this project," said **Davis Buckley, FAIA**. "It was clear to all of us the building was not in good condition and was going to require a high level of technical skill to bring it back."

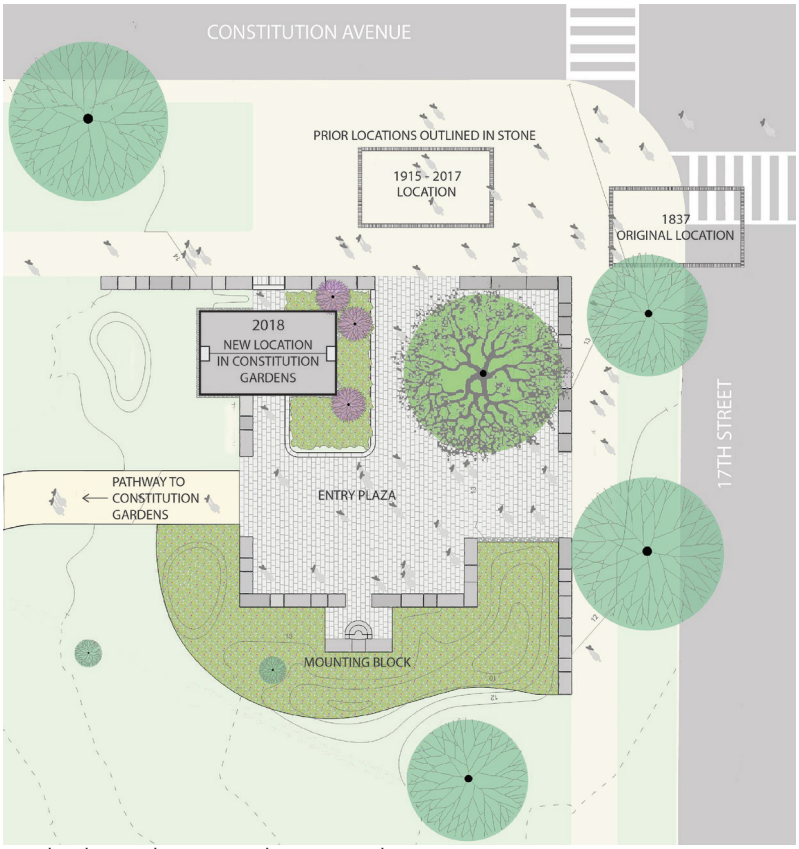
The first step was to move the house. The structure had already been relocated once in 1915 when it was shifted about 50 feet west to accommodate the extension of 17th Street, NW. Now, the house needed to be relocated once again, this time 40 feet southwest in order to pull it back from the encroaching Constitution Avenue and to create a suitable entry plaza for Constitution Gardens.

"The biggest challenge was that the original building was constructed of various materials, some soft stone and some hard, and joining the old foundation to the new required special detailing," recalled Buckley. To stabilize the structure and prepare it for the move, the team disassembled windows and temporarily filled their openings with masonry block. The two stone chimneys above the roofline, the result of an earlier

South façade before the latest relocation and restoration, with steps leading to the door.

alteration, were carefully taken down. The entire structure was repointed to provide stability as well as to reveal any cracking that might occur as a result of the move. A new concrete foundation and basement were built to receive the house and the 220,000-pound stone structure was braced, hydraulically lifted three feet, and finally guided to its new site. Recalling moving day, the architect said, "Some people watching held their breath, but we knew it was going to work. We weren't afraid."

The house during relocation.



Site plan showing the current and two previous locations of the Lockkeeper's House, along with the new entry plaza to Constitution Gardens.

Courtesy of Davis Buckley Architects and Planners

Once the Lockkeeper's House was in place, the exterior restoration could begin. The structure was aligned with the new foundation and the bottom of the house was carefully rebuilt. Tall brick chimneys were reconstructed to restore the 19th-century profile of the house. The failing cedar shake roof was replaced, and deteriorated wood trim, the eight hand-constructed windows, and two doors were either replaced or restored. The team managed to salvage some existing window sash locks for reinstallation.

The stone exterior required special attention. Because of the varied mix of stone, including soft sandstone, each stone type was restored appropriately and protruding stones were treated to prevent water seepage. Vertical cracks were repaired and new mortar joints were created to preserve the original stone pattern.

New accessible doors and frames made from the same wood species called for in the original 1830 specification were meticulously fitted into the irregular openings and completed with period-appropriate handcrafted hardware.

On the interior, the second floor was not reconstructed, in order to create one large space to welcome visitors. The project team secured the roof with tie rods and steel connections, and historic joists

Renovated interior, previously divided into several small rooms on two floors, but now a single open space. Note the open hatch in the floor at rear, allowing access to the basement mechanical room.

were salvaged and, where necessary, joined with new material that clearly differentiates the historic from the modern. The floor is a polished concrete slab and contains a hydraulic hatch that seamlessly conceals the stair to the lower-level mechanical room. Since the Lockkeeper's House sits in a flood plain, the basement was carefully waterproofed. The structure was fitted with air handlers and a geothermal cooling system with three 350-foot wells that regulate the temperature.

Surrounding the house is a new entry plaza with seating walls and large willow oaks to provide shade. The space is designed as a gathering area and encourages visitors to flow into Constitution Gardens. For history buffs, the two previous locations of the small structure are outlined with stone pavers.

The AIA Virginia and AIA Northern Virginia chapters have both recognized the Lockkeeper's House with historic preservation awards. One design competition jury said of the project, "It feels like welcoming back a lost treasure." On most days, volunteers are on hand to greet visitors and explain how this evocative piece of Washington history has been rescued, renewed, and is now ready to play its part in the next chapter of the National Mall.

Part of the interior before renovation.

Courtesy of Davis Buckley Architects and Planners

Interior with reconstructed fireplace.

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Living/dining/kitchen area of the AUTO-Haus, looking toward the rear of the house. Note see-through risers in the staircase at left.

Parking/Space

KUBE Architecture Combines Garage and Residence for a Car-Focused Couple

by Ronald O'Rourke

Project: AUTO-Haus,
Washington, DC

Architects: **KUBE Architecture**
Structural Engineers: **JZ Structural Consulting**
Custom Cabinetry: **Eric Lieberknecht Design**
Custom Steel: **Metal Specialties**
Custom Glass: **Gaithersburg Glass**
Custom Countertop: **Lukeworks**
General Contractor: **ThinkMakeBuild**

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The house as seen from the alley. The new second floor is set back from the property line.

Many Washington residents, especially those with access to multiple transportation options, feel no need to own a car. As of 2015-16, 37 percent of the city's households didn't have one, putting Washington behind only New York City; Newark, New Jersey; and Jersey City, New Jersey, on that measure.

Even so, there are still plenty of car-owning households in the city, including a fair number with multiple vehicles. It was one such household that selected **KUBE Architecture** to renovate and convert an old garage located on Naylor Court—a historic alley inside the block defined by 9th, 10th, N, and O streets, NW—into a combined residence and garage for themselves and their three cars.

"The clients, a young couple, enjoy working on and displaying their car collection, so this project merges their favorite hobby with their new living space," said **Janet Bloomberg, AIA**, a principal at KUBE. Their new residence, called AUTO-Haus, is a rare if not unique building type for the city.

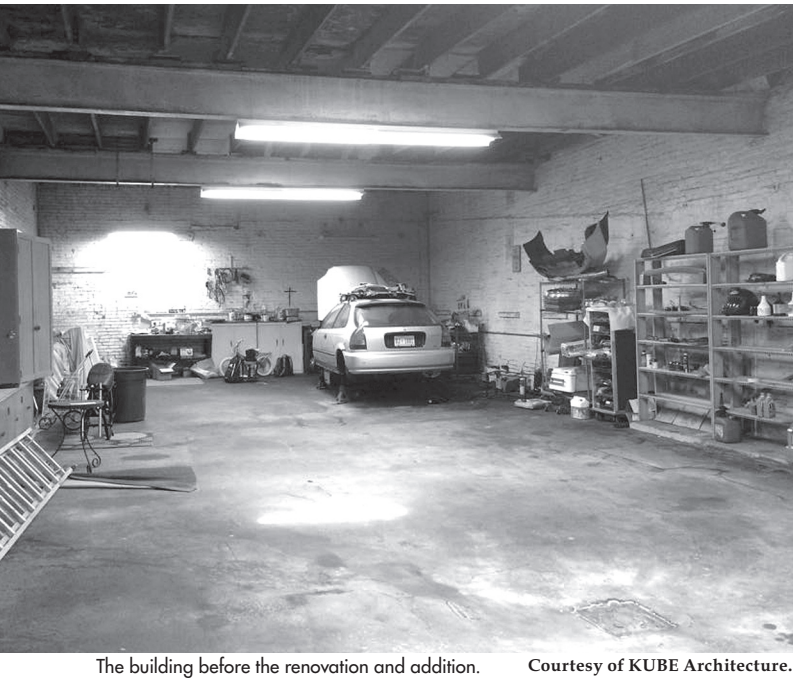
The old garage, built in the 1800s, was a one-story structure. KUBE's design added a second floor for additional living areas and a new basement-level mechanical and storage space, yielding a three-level structure including a 1,260-square-foot garage and a 3,080-square-foot, two-bedroom residence. The new basement extends under part of the garage, and auto supplies stored there can be moved directly into the garage via a hatch in the garage floor.

The residence's open-plan living area on the first floor is a spectacular, lofted volume that receives ample daylight from overhead skylights and a second-floor window wall. "The clients wanted flow and openness on the first floor, and an unimpeded connection to the loft above," Bloomberg said. The perforated-steel staircase that provides the connection "has such presence in the space, but almost disintegrates as you get near it," she said. "I've never done a transparent staircase before, so detailing it was a fun challenge."

Ample glazing in the wall separating the living area from the garage allows the cars to be viewed directly from the living area. "We researched similar projects, mainly in Europe—renovated garages that were turned into residences—but none of them had cars in them," Bloomberg said. "Much later, we came across one that had a similar program, but had divided it into two floors, with a garage below and residence above.

View from the landing of the staircase, showing the living/dining/kitchen area on the first floor and the loft library and roof deck above.

Loft library and roof deck.



The building before the renovation and addition. **Courtesy of KUBE Architecture.**

Although this was our first thought for [AUTO-Haus], we found it more interesting to keep the living space on the first floor with glass to the garage, thus joining the living and garage programs more seamlessly. We liked the idea of the owners looking at their cars as the view from their living space, since the cars are a very important part of their lives." Well-sealed walls and several exhaust fans in the garage that vent through the roof prevent fumes and car-related odors from invading the living space.

As is often the case in KUBE's work, color accents figure prominently in AUTO-Haus. "We wanted a clear expression of the steel beams as framing elements, so that's why we painted them off-black," Bloomberg said. "And we liked white as a backdrop to the whole composition. The blue in the kitchen was selected by the clients, as they love that color and I wanted the kitchen to be a feature color. The use of red came up toward the end—we wanted to emphasize the steel beam over the garage door, and we decided that adding [a color] punch there would be fun. We tested different colors and ended up with that bright red. Then that became a theme—the [doorway between the garage and the main living area] has some red to bring that color

Front of the house with the garage door open and closed.

into the building and show entry, and the owners have some other red items that fit right in. So color is used as an accent, with the main palette as black and white."

With its white walls, off-black steel beams, and blue and red elements, the main living area brings to mind a Mondrian painting or the Rietveld Schröder House in Utrecht, Netherlands, both of which exemplify the early 20th-century De Stijl movement in Dutch art and design. The use of the word Haus (German for "house") in the project's name reinforces such associations, since the De Stijl movement heavily influenced Germany's Bauhaus design school.

As completed, the residence's interior looks quite simple, but that doesn't mean it was easy to conceive or execute. "Simplicity is always the hardest thing to achieve," Bloomberg said. "Although the space is simple in plan, it's actually quite complex in section and three dimensions, with overlap of spaces, views, and natural light coming from several sources. So it feels very lively when you are there. And because you can view into the garage, there's a complexity to that spatial overlap—it always feels like there's more beyond."

To keep the interior design clean, KUBE concealed the pantry, a storage space, and the powder room behind the kitchen, used a concealed hydronic radiant system in the floors for all the heating, and used a high-velocity air-conditioning system consisting of small tubes that can run through walls, rather than a more-conventional system requiring large ducts.

Another design challenge involved the building's party walls, one of which wasn't strong enough to support the new second floor. As a consequence, "we had to insert steel columns above and below the existing beams to support that entire side of the house, rather than relying on the brick party wall," Bloomberg said. "It was like surgery." The building's existing steel beams, she added, "step down gradually in elevation, as they used to carry a sloped roof. Since they're now holding the new second floor, which is level, we had to develop a system of infill pieces—some made of wood, some of steel—to support the level floor. Then we had to make that look good from the lower level. The taller ones are very visible, so they're painted white. As they get smaller, we started painting them black as [faux] shadow lines. It looks great now, but it took quite a process of study and thought to get there."

Site drainage from the new roof and rear patio posed another issue. "The building is landlocked, with 100% lot occupancy, so we had to drain all water to the front—the alley end—while the roof slopes to the rear," Bloomberg said. In addition, "the owners wanted to be prepared for all of the crazy flooding and heavy rains that are now quite common. So we ran several drain lines from that patio area in back to the front alley, including in the basement ceiling and in the garage ceiling. It was a huge puzzle to get around and through all the steel structure without it being evident, but we did it."

Obtaining the required zoning variance and approval from the Historic Preservation Review Board took more than a year, and carrying out the construction work in the tight confines of Naylor Court wasn't easy.

"Bringing infrastructure to an alley property is challenging," Bloomberg said. For this project, "the water, gas, and electric [services] all had to be upgraded, and that took a great deal of time, money, and effort. The alley had to be dug up, which wasn't popular with other residents. This issue is sometimes preventing alley properties from being developed into residences, as it can be just too expensive to bring sufficient infrastructure to these sites."

Naylor Court and the city's other alleys "used to house mainly back-of-house buildings such as garages and carriage houses, and now we are realizing they can be repurposed as residences that allow for living in a new way," Bloomberg said. "I love the fact that this was always a garage, and it's *still* a garage—we've just incorporated a residence, too. I think that's a great use of the building."

View from the kitchen toward the front of the house. The cars in the garage are visible through the window wall behind the staircase.

Architecture KUBE ARCHITECTURE
Photography Anice Hoachlander

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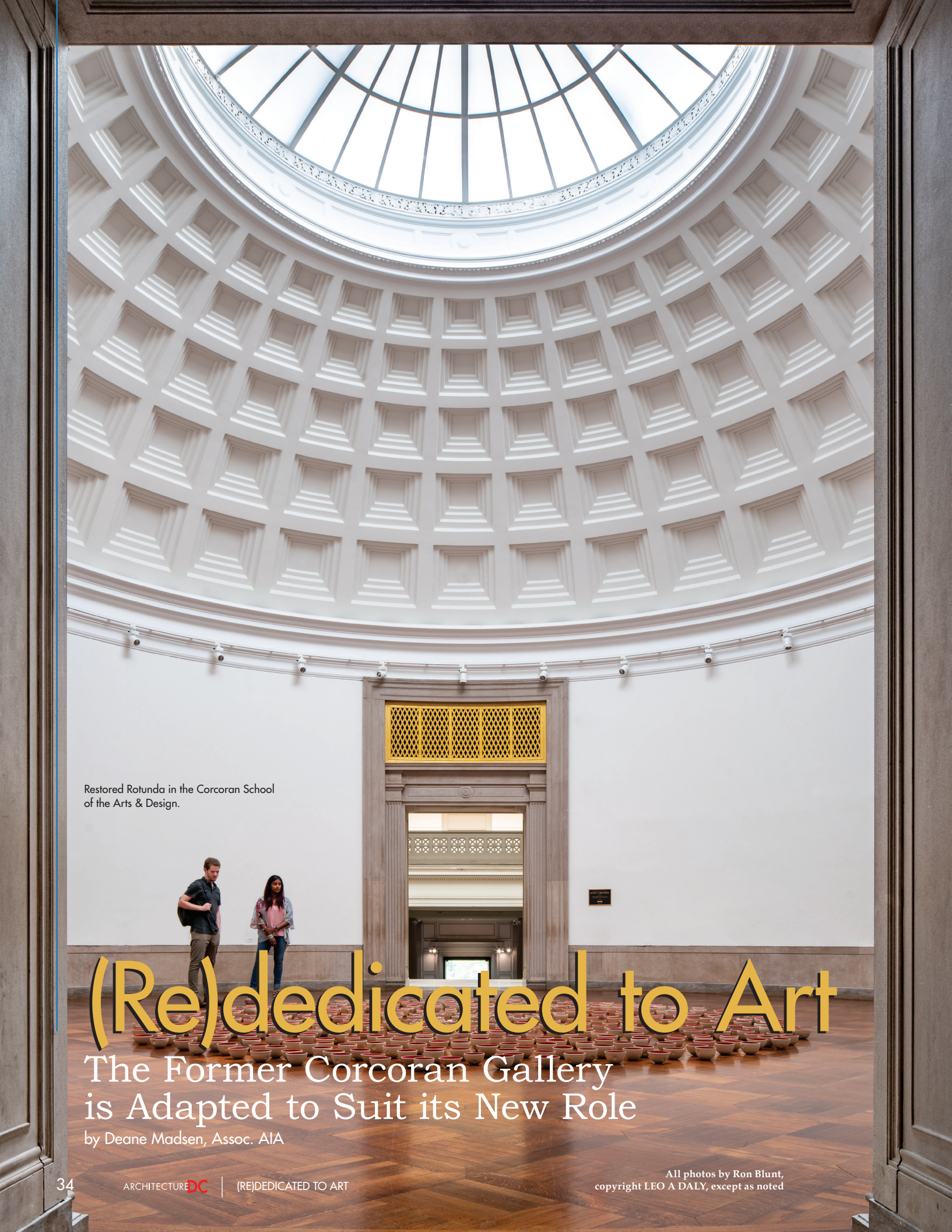


Restored Rotunda in the Corcoran School of the Arts & Design.

(Re)dedicated to Art

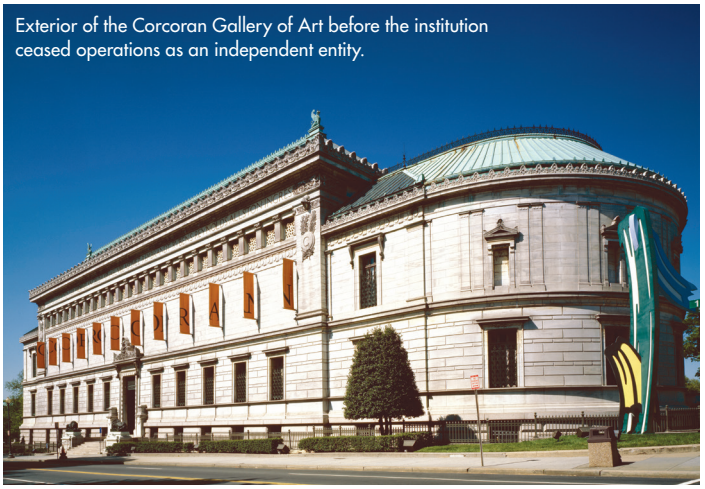
The Former Corcoran Gallery is Adapted to Suit its New Role

by Deane Madsen, Assoc. AIA

All photos by Ron Blunt, copyright LEO A DALY, except as noted

Project: Corcoran School of the Arts & Design,
500 17th Street, NW, Washington, DC

Design Architects/Programmers/Master Planners/Interior Architects/Restoration Architects: **LEO A DALY**
Historic Preservation Architects: **Davis Buckley Architects and Planners**
Structural Engineers: **Robert Silman Associates**
MEP Engineers: **Mueller Associates**
Civil Engineers: **Wiles Mensch Corp.**
Life Safety/Fire Protection Engineers: **GHD**
Laser Survey: **Meridian 3D**
Building Envelope Assessment: **WDP & Associates**
Computational Fluid Dynamics Studies: **Loring Consulting Engineers**
Elevator Consultants: **VDA**
Acoustical Consultants: **Cerami & Associates**
Specifications Consultants: **Marshall & Company Architects**
General Contractor: **The Whiting-Turner Contracting Co.**



Exterior of the Corcoran Gallery of Art before the institution ceased operations as an independent entity.

Photographs in the Carol M. Highsmith Archive, Library of Congress, Prints and Photographs Division

One of the biggest challenges of working with a landmarked building is how much effort is required to bring it up to code, but how little of the historic structure can be changed in doing so. That's the gist of the assignment handed to the firm of **LEO A DALY**, which was contracted to assess the programmatic viability of keeping the Corcoran School of the Arts & Design within its venerable building, and later won the commission for the overall renovation. That initial call thus blossomed into a multi-phase modernization of the 1897 Beaux-Arts-style building, originally designed by Ernest Flagg, and its 1928 addition, the Clark Wing, which was designed by Charles Adams Platt.

William Wilson Corcoran founded the gallery that bears his name in 1870 in the building now known as the Renwick Museum, named after its architect, James Renwick, Jr. The museum's expansion led to the construction of the newer Flagg building just southwest of the Renwick, with Corcoran endowing the gallery with a gift of $900,000, and an accompanying school with another $100,000. Leaving aside the complex backstory of how the Corcoran School became part of George Washington University (GWU) and the former Corcoran Gallery of Art's collection was absorbed by the National Gallery of Art (NGA), suffice it to say that the impetus for the refresh had less to do with rebranding than simply creating accessible and habitable spaces within a heritage building whose architectural future, at times, appeared bleak. Following its acquisition of the Corcoran School, GWU issued a request for proposals, calling for an increase in classrooms and gallery upgrades that would enable the facility to meet the NGA's rigorous climate control standards.

LEO A DALY's set of tasks was thus twofold: Starting with basic mechanical, plumbing, and life-safety measures, the firm would modernize the original building—whose exterior stone walls were suffering from vapor penetration and a lack of overall thermal control—to bring the Corcoran up to current code standards. Next up was bridging the gap between classrooms that were more than a century old and the needs of today's students.

In the first phase, the team installed mechanical systems and a code-compliant elevator, allowing proper temperature and humidity control as well as equitable access to two basement levels that were previously not universally accessible. The original building, though laced with a network of non-functioning or redundant plumbing, still lacked an adequate fire-suppression system, which the team also addressed. And, of course, masonry walls designed before the advent of air conditioning were not built with the kinds of mechanical cavities and plenum spaces that contemporary architects take for granted, meaning that the team had to get creative in fitting all of the requisite temperature control systems into whatever space was available. This meant adding platforms in the courtyard to support air-handling units and taking advantage of gaps between interior laylights and outward-facing skylights to run ductwork and the like—in other words, performing complex mechanical gymnastics without altering the landmarked interiors.

"We did an iterative process with computational fluid dynamics modeling to model temperature and humidity in those spaces," said **Tim Duffy, AIA, CSI, LEED AP**, who is vice president and director of technical services at LEO A DALY. "Then we would add insulation to the exterior walls or we would change how the HVAC system worked, and go through two or three iterations with digital modeling until we had those spaces within NGA criteria."

Adding to the complexity of these seemingly simple additions was the fact that the few extant drawings of the building were illegible, meaning that the design team had to start from scratch, or, taking advantage of current technology, with a full laser scan of the building translated to a digital model. Yet traditional, low-tech solutions played a role more often than expected: "There was a great deal of old-school detective work, [such as] taking a knife and poking into plaster to figure out what's there," Duffy said. We have a lot of tools in the bag, old tools and new tools."

That mixture of old and new is more evident in the parts of the school that have been added in the renovation, which include several classrooms built as self-supporting rooms within the original galleries—a byproduct of the Corcoran's landmark status that ensures any addition must be fully reversible. Where phase one saw the firm's work masterfully concealed, the second phase, of converting former gallery spaces into new classrooms,

New classroom, open to the skylit ceiling.

allowed for more visible interventions and a contemporary design aesthetic. These classrooms feature glass walls and partitions that delineate teaching spaces from circulation, but have open ceilings—dampened with acoustical baffles—to take fullest advantage of the existing gallery laylights. These rooms, Duffy said, were "the one place in the building where we had to build boxes within boxes. And so that opened up the possibility, and the necessity, of making something new within something old."

The success of the first phase is that it's hardly noticeable. Yet with the second, the modern intervention of new teaching spaces within existing, historic galleries is strikingly contemporary without being obtrusive. Combined, these two phases add up to functional gallery spaces that meet elevated conservation standards paired with schoolrooms that aim to steer the next generation of artists toward exhibitions upon those gallery walls, allowing GWU to continue the Corcoran's mission.

Classroom space before renovation. Copyright LEO A DALY

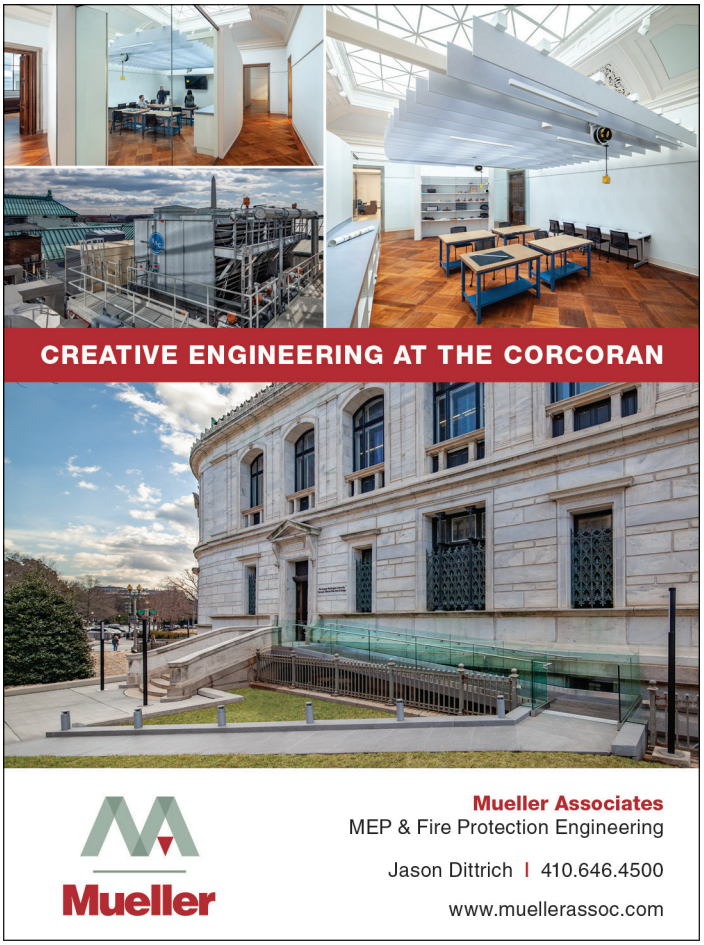
New classroom space.

Restored atrium.

Classroom defined by removable partitions.

Restored grand staircase.

"One of the beautiful things about the project to me is that it's still what it was built to be in 1897, which is an art school and an art gallery, as opposed to becoming a mall," Duffy said. "There's somewhat less gallery space and somewhat more academic space now, but to my mind, the best thing that could happen would be that it would at least maintain the same use. And it did." Now, although the percentages of the building devoted to display and teaching space have effectively swapped, the Corcoran remains, as stated above its entry, "Dedicated to Art."



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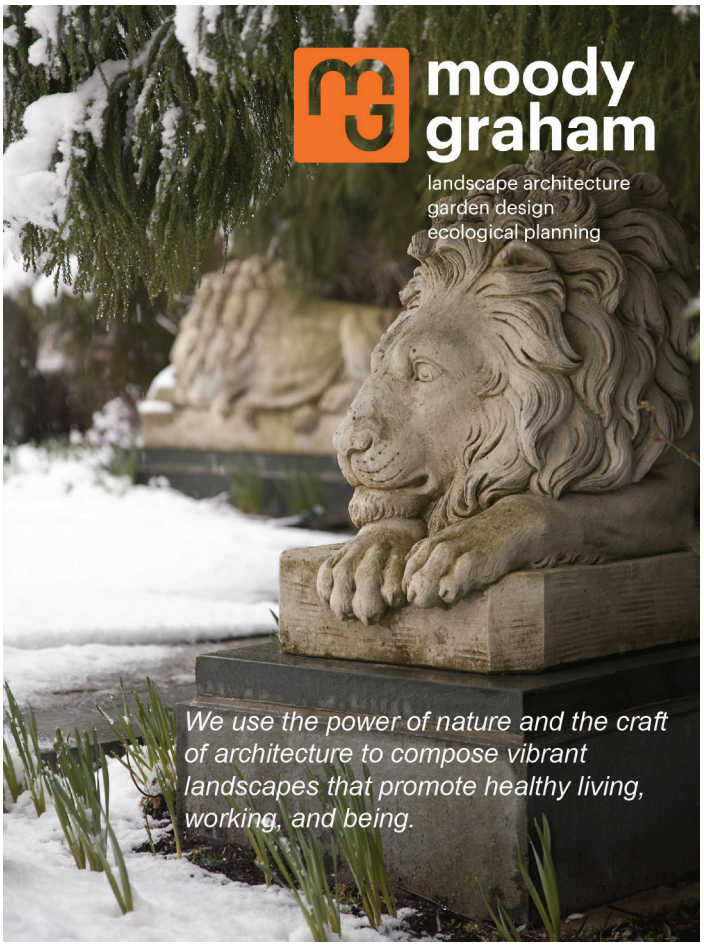

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The Ambassador Barbara Barrett & Justice Sandra Day O'Connor Washington Center at Arizona State University, occupying a renovated office building in downtown DC.

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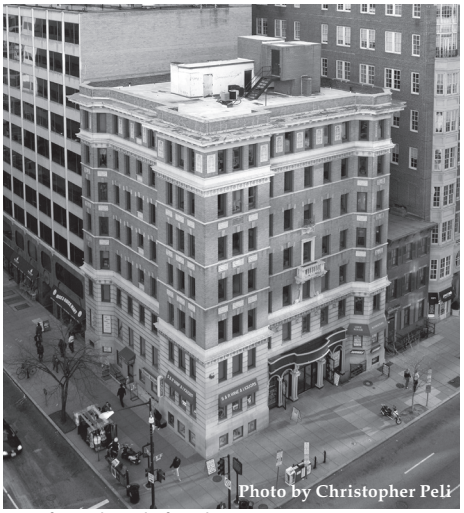

View from above before the renovation and rooftop addition.

View from above showing the rooftop addition and terrace. Note the extended windows at ground level, accommodating the lowered first floor.

AZ in DC

Arizona State University Puts Down Roots in the Capital

by Steven K. Dickens, AIA, LEED AP

Arizona State University (ASU) is one of the largest universities in the United States, with some 60,000 students attending classes on its main campus in Tempe, plus another 50,000 at satellite campuses and online. In the past, ASU was perpetually at the top of rankings of "party schools," but in 2002 its then-new president, Michael C. Crow, set the course for a different vision: the "New American University" model, Crow called it, in which, among other things, the school would measure itself "not by whom it excludes, but rather by whom it includes and how they succeed."

"One university in many places," is a key piece of Crow's concept—the university works to be convenient for the student, rather than the other way around. Distance (internet) learning is central to this, of course: some 30,000 of ASU's students are enrolled in online programs and don't actually go to physical classrooms. But offering a broader reach and higher-quality brick-and-mortar classrooms and other academic facilities also figures in, with numerous new campuses and buildings bringing state-of-the-art learning facilities to a wider range of students—and bringing students and faculty to varied places relevant to their studies. This program was effective in attracting funding from both public and private sources, covering costs for an immense increase in students from families with

Project: Ambassador Barbara Barrett & Justice Sandra Day O'Connor Washington Center at Arizona State University,
1800 Eye Street, NW, Washington, DC

Architects: **CORE architecture + design**
Structural Engineers: **Shemro Engineering**
MEP Engineers: **Girard Engineering**
Civil Engineers: **Wiles Mensch Corporation**
Geotechnical Engineers: **Schnabel Engineering**
Historic Façade Engineering Consultants: **Odeh Engineers, Inc.**
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Close-up of the rooftop function space, with sliding doors open to the terrace.

incomes below the poverty line (more than a 600% increase), plus an impressive collegiate building boom.

Most of that building boom is in the Phoenix area, but one far-flung outpost is the 32,000-square-foot Ambassador Barbara Barrett and Justice Sandra O'Connor Washington Center in downtown DC, just a few blocks from the White House. The center's name honors the former diplomat and the former Supreme Court justice, respectively, both of whom stood out from the Washington federal crowd in part because they never let their identities as Arizonans fade. The center houses a half-dozen programs that were already in DC but in scattered, leased spaces, none of which had exterior signage bigger than a plaque. The center unifies and magnifies ASU's Washington presence, with the entire building serving as a sign that the university is a force here in the capital.

The building was constructed as apartments in 1910, when the neighborhoods west of the White House were almost exclusively residential; it was converted to office use in 1960, when substantial tracts of rowhouses and apartment buildings in the area were being demolished for new office blocks. The mid-century expansion of DC's office core north and west of the White House predates the city's historic preservation statute (passed in 1972), and the results of the boom left remarkably few pre-war buildings in the area now called the "Golden Triangle." One survivor, however, was the apartment building at the southwest corner of 18th & I streets, NW, which had no parking and whose floor plates were too small for most market-rate tenants, but a location only five minutes' walk from the White House. According to the Arizona media source *AZCentral.com*, when planning for the Washington Center was under way,

Rooftop terrace.

ASU's president Crow literally put his hand on a map of central DC covering the area in which he wanted the center to be located—a radius of about ten minutes' walk from the White House. ASU's real estate wing went to work, and found the building at 18th & I to be a nearly ideal candidate..

For the previous owner, who was seeking to sell the building, **CORE architecture + design** had done "test fit" studies as part of the marketing package. When ASU purchased it, the university saw wisdom in building on CORE's previous work, so the same firm was hired for the job, with principal **David Cheney, AIA**, as the lead. The university's architects (back at the main campus in Tempe) played the critical role of coordinating the various user-tenants, leaving CORE to focus on the challenges of design, preservation and other approvals, and construction logistics.

The first problem was that the building simply wasn't big enough for ASU's needs. Filling in a pre-existing courtyard—more like a big light well, really—and adding an eighth story resolved that elemental problem but, as is so often the case, created others. It was necessary to get approval from the DC Board of Zoning Adjustment, and, more consequentially, the DC Historic Preservation Office (HPO) became involved.

The Barrett and O'Connor Washington Center was one of the first projects subject to a new form of historic design control. The building was not in a

Rooftop function space, with sliding doors open to terrace.

Lobby, with sculpted wall—evoking the slot canyons of Arizona —at left, and exterior of Decision Theater at right.

historic district, nor was it an individually listed landmark, so on the face of it, the HPO would have no role. But in recent years, HPO has started a program of design review based on the potential that a given building *could* easily be nominated for landmark status (or *could* become part of an expanded historic district; or, if it already falls within a historic district, *could* have its formal status switched from "noncontributing structure" to "contributing structure" within the historic district). In each of these circumstances, a lengthy process—during which the project essentially goes on hold—would virtually always culminate in full oversight by the Historic Preservation Review Board (HPRB).

Recognizing the burden that such a situation can place on a property owner, HPO has devised a process in which the owner agrees to a modest level of historic oversight in return for HPO's not pursuing a higher level of historic preservation protection. The oversight covers the most important aspects of preservation while providing significant flexibility on aspects of secondary or tertiary importance.

In this case, HPO's primary requirements were a high-quality restoration of the exterior façades and a significant setback of the new eighth floor. Conveniently, these were things that ASU and CORE wanted anyway—the restored façades to enhance the university's image, and the setback to provide a roof deck for gatherings. But it wasn't entirely so easy. In exchange, HPO allowed some design elements that, in a project subject to full historic controls, would typically be resisted and oftentimes denied outright.

First, only the outside walls were kept; the entire interior structure was demolished and replaced by a new concrete frame. This technique was not uncommon in the early years of historic preservation in Washington, but starting in the 1990s, HPO and HPRB moved towards requiring fuller-building preservation. Nowadays, HPRB's approval of a façades-only scheme is strictly limited to circumstances in which other options aren't viable.

Second, CORE was able to pull the first floor down a half-level to grade level. This provides a high-ceilinged main floor and tall windows and doors that give the building a strong sidewalk presence, and it greatly eases accessibility. From the preservation perspective, however, it alters the historic condition, which was an English basement configuration. HPO wisely saw that, in this case, the positives outweighed the negatives. Moreover, the original configuration is maintained at the bay windows at either end of the L-shaped façade, so the history has not been erased.

An invisible type of preservation occurs in the walls themselves. In older masonry buildings, the outer walls were load-bearing, but typically when only façades are maintained in a rehabilitation project, the façade essentially becomes a "curtain wall," which is a non-structural wall supported by the new structure beyond. In this case, however, the building's small footprint (approximately 60 feet square) did not allow for the additional columns and beams that would be required to carry the weight of the façade, so in fact the exterior walls are still load-bearing. This required a painstaking demolition and temporary bracing process.

ASU wanted the building to be "of Washington," but also wanted symbolic ties to its home base. The architects wrote, "As homage to the American desert Southwest home of Arizona State University, a sweeping 40-foot-long by 10-foot-high sandstone feature wall greets visitors in the building lobby."

Decision Theater, the design of which was inspired by the War Room in the movie *Dr. Strangelove*.

The "slot" canyons of Arizona were the inspiration. The effects of water and wind acting over millennia were translated to digitally-modeled forms created by a CNC (computer numeric control) fabrication system in which two pulleys pulled a diamond-cut rope across the surface of the stone. This yielded the general form that CORE sought, but sandblast-sculpting by hand was necessary for the full effect, reducing the sharpness of the edges and highlighting natural striations in the rock.

The resultant feature is a blend of modern and ancient, abstractly tying the DC facility to Arizona. It forms the west wall of the entrance lobby, its undulating diamonds a counterpoint to the curved wood slats of the east wall. To those in the know, at least, the east wall announces another ASU-specific feature of the building: the "Decision Theater," which is "an accelerated decision-making simulation room, of which [ASU has] several all over the world," according to **Christopher Peli**, the project designer at CORE. He added, "On the inside, we had a little fun with the idea of this intense 'situation room' simulator." The big circular light fixture and dark acoustic surfaces were the design team's homage to the War Room in the classic Cold War movie *Dr. Strangelove*.

The Decision Theater is very acoustically sensitive. It would not normally occupy such a visible and prominent—but noisy—location, but the building's first floor (lowered to street grade) was the only story with sufficient ceiling height. The floor and partitions are isolated from the building's structure and have high acoustic separation ratings, similar to those of a recording studio.

CORE's primary interior design work occurred at the lobby level and the new eighth floor, which features a glass-walled space that functions as a classroom, auditorium, and ballroom/event space. "We spent a great deal of time hiding the technology and accommodating the different layout configurations… to make it as flexible but impressive as possible," noted Peli. The *pièce de résistance*, requiring two post-tensioned concrete beams, is the outside corner, where custom six-panel sliding doors can open the entire space to the adjacent terrace (which, with its views to the Eisenhower Executive Office Building—part of the White House complex—a block east, unmistakably says "Washington").

The center houses an impressive array of programs that benefit enormously from the location: four different ASU schools; multiple think-tanks related to ASU and the southwest; a policy journal; and ASU's federal government relations office. As renovated, the building now sparkles amid the more utilitarian office buildings of the Golden Triangle, and symbolizes the growing ties between Arizona and DC.

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Rooftop Renaissance

A Historic Apartment Building Gets a Penthouse Amenity Space

by Ronald O'Rourke

All photos © Morgan Howarth, except as noted

Dining, billiards, and lounge areas. Diaphanous curtains can be pulled to separate the dining area from the rest of the space.

Imagine an aging movie star concerned about fading looks who "has some work done" to help hold off competition from younger actors, and you can start to get a sense of what the architectural firm of **Eric Colbert & Associates** (ECA) has recently done for the Envoy, a historic apartment building at 2400 16th Street, NW, directly across the street from Meridian Hill Park. But to fully understand ECA's work at the Envoy, which entailed more than simple cosmetic changes, it's best to rewind the movie reel of the building's history back to its beginnings a century ago, during the silent movie era.

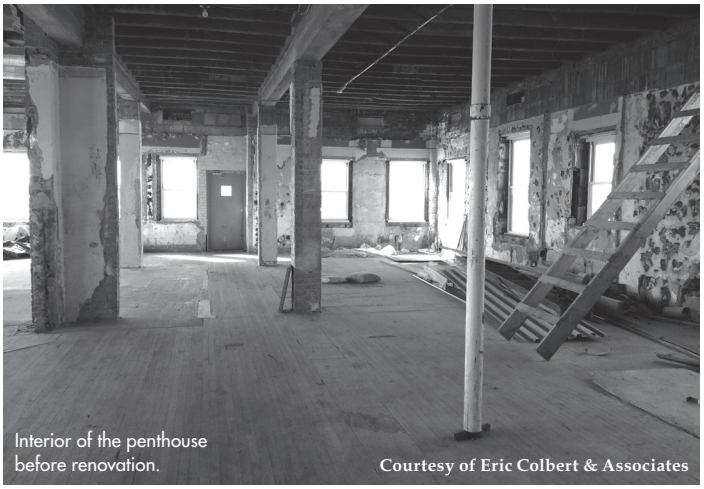
In the late 1800s and early 1900s, Mary Foote Henderson, the wife of former U.S. senator John Brooks Henderson, campaigned assiduously to transform the area surrounding the couple's solitary, castle-like house on 16th Street, north of what is now Florida Avenue, from a semi-rural landscape into a fashionable residential district. Her efforts inspired considerable results, including Meridian Hill Park and a number of embassies and grand residential structures, among them the Envoy at the corner of 16th Street and Crescent Place, NW.

Initially called the Meridian, the building's name was modified to Meridian Mansions or Meridian Mansions Hotel in the 1920s and early 1930s, when it was one of Washington's residential "best addresses," with tenants including ambassadors (i.e., envoys) and Members of Congress. It was renamed Hotel 2400 in 1935, and redubbed the Envoy Towers—or simply the Envoy—in 1965.

Project: The Envoy Penthouse,
2400 16th Street, NW, Washington, DC

Architects/Interior Designers: **Eric Colbert & Associates PC**
Structural Engineers: **Ehlert-Bryan Consulting Structural Engineers**
MEP/FP Engineers: **Dwyer Engineering**
Specifications Consultant: **Rosa D. Cheney, AIA**
Furniture, Fixture & Equipment Procurement: **Millennium Procurement**
Owner's Representative: **Urban Systems**
General Contractor: **Donohoe Construction Company**

The penthouse is invisible from Meridian Hill Park.



Interior of the penthouse before renovation. Courtesy of Eric Colbert & Associates

Designed in the Italian Renaissance style and built between 1916 and 1918, with terra cotta and limestone facing, the seven-story (plus basement) building consists of four parallel wings connected by a spine running down their middle, producing a double-H floor plan. The building was originally topped by two open-air, Beaux-Arts-styled summer pavilions on its 16th Street façade, and another two on its Crescent Place façade. The prominent pavilions, which resembled bell towers, were removed along with an associated roof deck as part of a reroofing project in the early 1960s, giving the building its current less-ornate, flat-topped appearance. Today, the Envoy's most eye-catching exterior features are its formidable ranks of partially inset, stone-bracketed balconies.

Following the reroofing project, the Envoy's fortunes declined, and by the mid-1970s it was dilapidated and largely empty. In a bid to reverse that situation, the building underwent a major renovation in 1980-81 that was intended to convert it into a condominium. The project restored the building's grand, marble-clad lobby, known as the Promenade, to its original 1917 appearance, but otherwise completely reconfigured the building's interior, eliminating its other historic interior features. Two years later, in 1983, the building was listed on the National Register of Historic Places.

The building as completed in 1918 also featured a nine-room, 3,500-square-foot penthouse apartment that was permitted as an exception to DC's Height of Buildings Act of 1910 (under the original terms of that law, penthouses could be used only for mechanical equipment and services). The exception was granted because the apartment was located toward the rear of the building and consequently wasn't visible from 16th Street. The apartment was used as a residence until 1944-45, when the exception came under legal challenge. The dispute was resolved by a 1952 law that permitted the penthouse structure to be used as something other than private living quarters.

The penthouse's interiors were gutted as part of the 1960s re-roofing project. The 1980-81 renovation then added a small second level to the penthouse while removing a grand staircase that had connected the penthouse to the first-floor lobby. The plan at that time was to convert the penthouse into a social and amenity space. A sharp spike in mortgage rates, however, undermined the condominium market, and work on the penthouse was abruptly halted, leaving its interior in a partially

Media area.

Circulation spine through the amenity space.

EXIT

finished state. The Envoy eventually reopened as an apartment building rather than a condominium, but the penthouse structure remained frozen in its 1981 unfinished condition.

A 2014 amendment to the height act allowed penthouses to be used as rentable or sellable space. "By this time," according to ECA, "the Envoy was feeling the competition of new [rental] buildings and renovations of existing ones, almost all of which had increasingly elaborate amenity suites." In comparison, "the Envoy had nothing to offer, aside from the Promenade." To redress that situation, the Envoy's owner hired ECA to convert the penthouse into a modern amenity space, including a fitness center, a lounge and party room, bathrooms, and new roof decks.

The penthouse by that point was architecturally a dog's dinner—a dysfunctional mix of the original 1918 penthouse, some 1960s-era work, and the 1980-81 project's second level and unfinished interior work. "There were ducts and electrical lines that connected to nothing on either end, and mechanical equipment which had never been turned on," ECA said. "Interior work at the former apartment had not started at all, and the expansion spaces were enclosed, but remained raw space."

Demolishing the penthouse and starting over was an option, at least in theory, but working with the existing structure was deemed less expensive and had the advantage of preserving some of the penthouse's 1918-, 1960s-, and 1980s-era features, all of which could now be considered of historic value, particularly in reflecting the building's complex history over the last century. The existing penthouse's structure, moreover, went right to the building's edge, while a new penthouse would likely need to be designed with a setback from the edge, which would have produced a fairly narrow structure, given the shape of the building's floorplate.

In designing a new amenity facility for the penthouse, ECA faced three challenges. One was to give the facility proper emergency egress, which the architects met by re-inserting a modern version of the interior grand staircase that had been eliminated in 1980-81, and by adding covered rooftop walkways to separate emergency stairways at the building's edges. A second challenge was to lend some architectural order to a space that badly needed it. "The penthouse, interior and out, was extremely irregular, [which was] partly a reflection of the various accretions and eliminations that happened over the decades," ECA said. "No two windows were alike, there were constant shifts of ceiling height and wall plane, and other irregularities." To address this, ECA organized its design around a regularized central circulation spine modeled after the Promenade, and then carefully fit the facility's individual spaces into the structure's remaining areas. The third challenge was to design the facility so that its new plumbing hookups would align with the plumbing stacks of the occupied apartments below.

The overall design goal was "to create a modern amenity suite, but also recall the various periods of the penthouse's somewhat unusual history," ECA said. In support of that goal, the new facility's lobby, circulation spaces, bathrooms, and re-inserted stairway were designed as modernized versions of the Promenade's Beaux-Arts architecture.

"The basket-weave pattern of the [new facility's] flooring is a direct quotation from the Promenade, and the material—limestone-look tile—is very much a modern version of the Tennessee Pink marble in the Promenade," the firm said. The new facility's lighting is similarly a modern take on the Promenade's mix of direct, indirect, and ornamental lighting fixtures, while gold-toned accent tiles in the pilasters of the penthouse elevator lobby recall gold-painted patterns in the Promenade's arches.

In contrast, "the shell of the main lounge space was left in its raw state, more or less how it has looked since being gutted in the 1960s," ECA said. "Raw brick and terra cotta walls, concrete joist ceilings, and exposed wiring contrast with refined modern furnishings and new tile floors."

Maintaining the raw character of that area "represented a happy alignment of budget and aesthetic aspiration," said **Steven K. Dickens, AIA, LEED AP**, an associate at ECA [who is also a contributor to *ARCHITECTURE**DC***]. "We particularly liked the idea of a very raw space in a penthouse: unexpected, and indicative of the bizarre fact that the space had been abandoned for so many decades." Visitors, he added, "absolutely do not expect this expansive space, with such clean styling of the floor and furnishings, but such raw walls and ceilings."

The facility's dining, bar, television, game, and lounge areas are defined in part by the space's columns and ceilings. The spaces added in the 1980-81 renovation, which included sloping greenhouse windows, were finished off in a simple manner to become fitness centers. ECA's interior work also included selecting the new facility's furniture.

The project's main exterior element is a new colonnaded walkway that does double duty, leading occupants not only to the emergency roof-accessible stairways, but also to the building's impressive rooftop viewpoint, which affords vistas of Meridian Hill Park and the city's monumental core. The colonnade uses iron-spot brick that matches that of the existing building and incorporates some classical detailing to provide visual interest. The penthouse's exterior, the firm said, "was quite utilitarian, with none of the Beaux-Arts flourishes of the building's main facades." Consequently, the new rooftop decks were located not only to maximize the rooftop's panoramic views, but also to minimize views of the inelegant penthouse exterior itself.

A century after it was first built, the Envoy has now "had some work done" that recalls the building's past while positioning it better for today's rental market. "We've brought the Envoy into the 21st century, but instead of burying its complicated history, we left a lot of clues," Dickens said. "This engages users, and roots the modernism [of the new design] into something deeper than the particular year that the project was realized."

An unusual challenge, he added, was that "over the decades, the penthouse had become somewhat romanticized. Both its storied past and its abandonment were alluring in different ways. As much as tenants would appreciate having a fitness room, roof deck, and lounge, there was a real risk that the emotional reality of a renovation and re-occupation could disappoint. By weaving a lot of clues to the past with a dynamic modernism of the present, however, I think we ensured that very few visitors are disappointed."

New rooftop promenade at the Envoy.

View from the roof terrace toward DC's monumental core.

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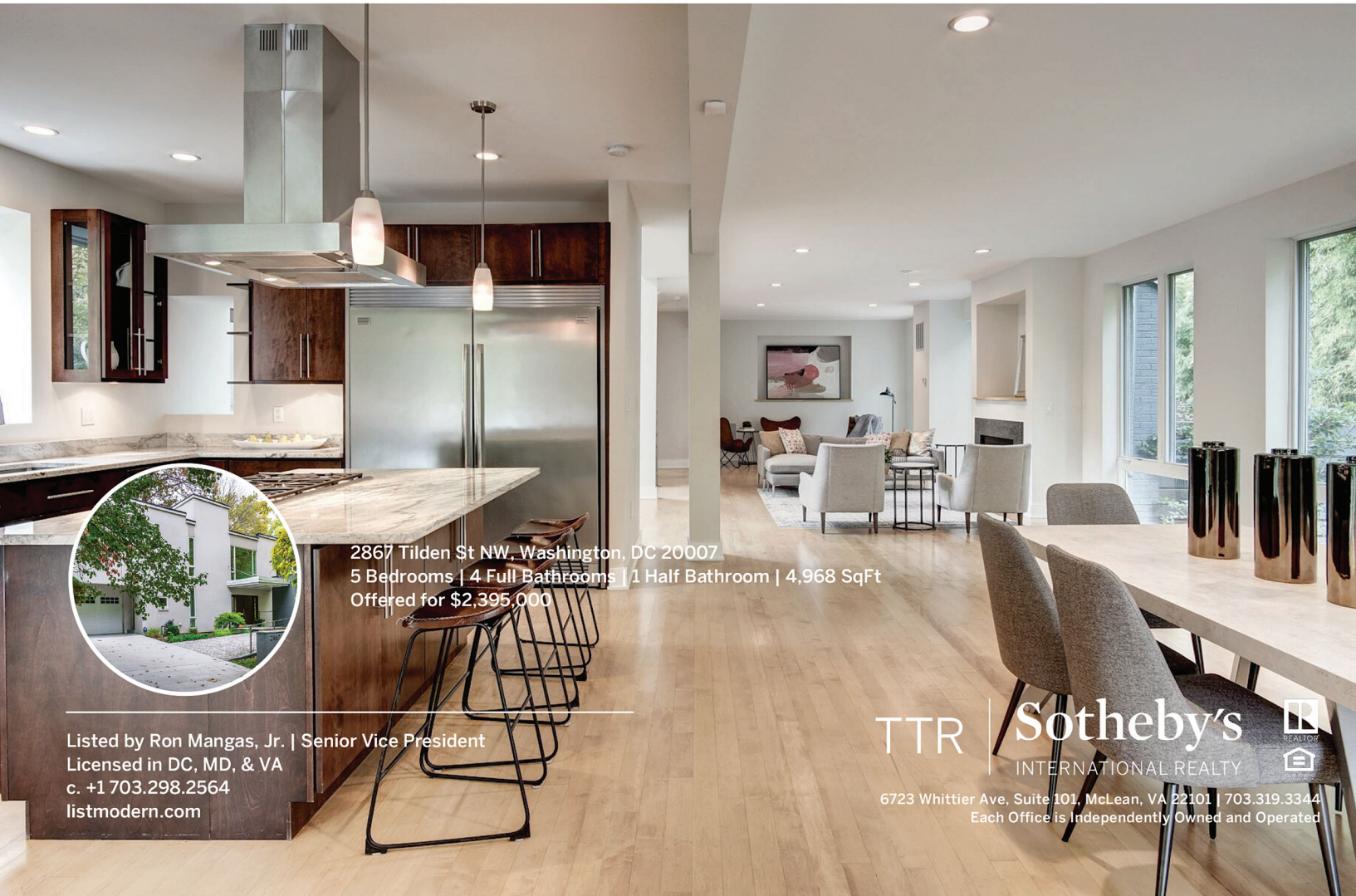

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Grand Stair in the Stewart Lee Udall Department of the Interior Building.

Interior Motives

Generation-Long Project Modernizes Cabinet Department

by Steven K. Dickens, AIA, LEED AP

It's not unusual for an architectural project to take several years from the beginning of the design phase through completion of construction, and few architecture firms can match the depth of experience that the architecture firm of **Shalom Baranes Associates** (SBA) has with large, multi-phased, institutional rehabilitation/restoration projects. But even by SBA's standards, the modernization of the Washington headquarters of the Department of the Interior (DOI) is superlative. The firm's work on Phase 1 started in 1994, and Phase 6—the final phase—was completed in 2017. That's *23 years* from start to finish.

To be sure, there were substantial periods of inaction due to funding hold-ups and other issues. Construction of Phase 1, in fact, did not begin until 2002, a sufficiently long gap that the original design documents, completed in 1997, had to undergo significant updates to meet new code requirements. There was another "hold" period from 2012 to 2014. Nevertheless, the project had some 16 active years, and even during the hold periods, work seldom dropped to nothing: for this kind of project, there's always another little study to perform, form to fill out, or conference call to join.

Photo © Ulf E. Wallin

Exterior of the Department of the Interior Building.

Courtesy of Shalom Baranes Associates

Project: U.S. Department of the Interior Headquarters Modernization,
1849 C Street, NW, Washington, DC

Architects: **Shalom Baranes Associates**
Structural Engineers/Physical Security Designers: **Thornton Tomasetti**
MEP Engineers: **GHT Limited**
General Contractor: **Grunley Construction Company**

Ultimately, the project spanned four presidencies and six administrators of the General Services Administration (GSA), the client agency, representing a wide range of views about the role of the federal government and how federal offices should function. Notably, the GSA's "utility ratio"—essentially square footage per employee—continually tightened. Security needs increased dramatically, through the Oklahoma City bombing of 1996 and then the terrorist attacks of 9/11. The digital office revolution, starting to mature as the project ended in 2017, was still in its infancy in 1994.

Moreover, although GSA has long been at the forefront in historic preservation, standards for preservation projects have shifted considerably in recent decades. GSA has also long been a leader in sustainable design standards—but in this case, in 1994 there really weren't any: Not only did the DOI project span versions 1 through 3 of the LEED program, but the project was a LEED pilot project before the standard formally existed. The building's lighting is a good example: "We started with incandescent, moved to CFL [compact fluorescent], and finished with LED," noted **Bob Booher, LEED AP BD+C**, an associate principal at SBA who was the project manager from 2005 to 2017.

All of this—as if the modernization of a 1.2-million-square foot building on the Register of Historic Places wouldn't be sufficiently challenging of its own merits.

The DOI headquarters, officially the Stewart Lee Udall Department of the Interior Building, occupies two entire city blocks in the "Federal Rectangle" area of Northwest DC, near the White House. Built in 1936, it was the first federal project of the New Deal's Works Progress Administration (WPA), and served as a model for other federal construction projects later in the New Deal period. This started with the styling: DOI is a prime example of what is sometimes called "stripped classical," or more catchily, "Greco-Deco" or "Stark Deco." That is, while there is a classical ("Greco") bent to the ornamentation, overall the surfaces are far less ornamented ("stark") than would be typical in a full-blown Art Deco or neoclassical building.

Artworks were integrated into the architecture, primarily in the form of murals and stone bas-relief sculptures. Most of the artworks, along with the occasional architectural detail, were themed to reflect the department's mission and scope: Native American and Western wilderness imagery is prevalent. In an era of institutionalized racial segregation, the inclusion of works focusing on African American and Native American history and culture caused a stir.

The size of the building was also prototypical—the idea being to consolidate all branches of a given cabinet department under one roof, with an enormous amount of flexible, daylit office space supported by a small city of amenity and service spaces including a cafeteria, art gallery, soda shop, broadcast studio (originally the Voice of America radio), and a health clinic. The DOI headquarters also included such innovations as the first air conditioning and escalators in a federal building,

C Street Main Lobby.

C Street lobby before renovation.

Photo © Shalom Baranes Associates

Photo © Ulf E. Wallin

Main Corridor above Grand Stair.

Photo © Shalom Baranes Associates

along with the most extensive telephone system to date. By intention, the majority of the building was solidly-built but somewhat plain, relieved by noble materials and more elaborate design in the public and common-use areas.

A starting point for the modernization project was to categorize the various areas of the building into three "zones"—Restoration, Rehabilitation, and Renovation—with protocols assigned to each. This gave order to the huge project, and proved important, as the years went by, in maintaining continuity.

Most of the photographs accompanying this article are of the "Restoration" areas: the C Street (South) entrance lobby, the 755-seat auditorium, the reading room of the department library, the secretary's office suite, part of the museum, major corridors, and a grand stair. These are the spaces that give the building most of its architectural character. Here the goal was to return the spaces to their original 1936 appearance, layout, and materials, with modern necessities (e.g., sprinklers, air conditioning grilles, smoke detectors, and communication/power outlets) incorporated as invisibly as possible.

Next were the "Rehabilitation" areas, where the architects determined that there was a bit more design leeway because the spaces were of less significance and/or because modern technological requirements were so different from the original that true restoration simply didn't make sense. These spaces include the secretary's conference room, the Indian Craft Shop, the news/broadcast studio, and the rooftop ice cream parlor.

The last category was the "Renovation" areas, in which the original elements did not contribute significantly to the overall architectural character of the building or were functionally obsolete. This included most of the office areas, which, to the credit of the original architects and WPA, were intended to be flexible spaces able to change fairly easily with the times.

Although, in terms of sheer square footage, the Renovation areas are by far the largest part of the project, SBA noted that "throughout the building, original terra cotta tile, limestone and marble walls, marble and cork flooring, ornamental metalwork, and plaster wall/ceiling finishes were restored." In most areas, lighting was returned to its original state, except with updated lamping. All spaces were subject to current accessibility standards, as well as federal standards for blast resistance, which apply mainly to the windows. One area in which the original building was tremendously outdated was fire safety. The project not only included adding sprinklers throughout, but also cutting 12 new exit stairways through the existing fabric of the building—one at the end of each 120-foot-long wing.

The initial phase was part of a LEED pilot project (for LEED for Existing Buildings) which DOI itself administered. Among other things, SBA contributed specifications for recycled content of materials, construction waste management, and sustainable wood products. The project's mechanical, electrical, and plumbing (MEP) engineers, GHT Limited, developed an energy model that was advanced for the time.

Photo © GSA

Cafeteria.

Photo © Anice Hoachlander/Hoachlander Davis Photography

Notwithstanding the participation in the pilot project, certification under LEED didn't kick in until Phase 4, when a GSA leadership change brought a client entity keenly interested in sustainability. Since, at that point, three phases were already completed, the project could not pursue a full-building certification. Instead there are four separate Interior Design and Construction (LEED ID+C) certifications. Phases 4 and 5 received the base rating ("certified") under LEED version 2; the cafeteria received a platinum rating (the highest), also under LEED version 2; Phase 6 received a gold rating (next to highest) under LEED version 3; and the child care center received a platinum rating under LEED 2009.

A person who passed the building frequently during those 23 years could almost be forgiven for thinking that security upgrades (e.g., barriers at vehicle entry points) and sustainable landscaping were the primary aims of the work, because almost nothing else affected the building's exterior. The limestone façades of the building were cleaned and given basic maintenance, but there are almost no clues to the considerable modernization inside. This, of course, is how the preservation powers-that-be (in this case, the Federal Commission of Fine Arts) wanted it. The blast-proofing of windows was largely accomplished via interior storm-type windows. Even the new emergency exits, one per stair in accordance with the International Building Code, barely register. There is, in fact, one immense exterior addition, but it's not visible from the ground: more than 40,000 square feet of green roof.

The sheer duration of the project created a bond between the architect and building. "You think you get to know [the building] in the beginning of your relationship, and then through testing out the solutions to each of the challenging problems of integration, [you] keep discovering the more interesting aspects," said Booher. "The building keeps teaching you through the whole process. Working with historic buildings gives you an invaluable appreciation of 'archaic' materials and the people who mastered them."

Members of the project team, some of whom spent a considerable amount of their careers on the project, have of course moved on. DOI employees are probably glad that the years of disruption are finally behind them and pleased to

Auditorium

Photo © Ulf E. Wallin

have a modern workplace with beautiful common-use areas. As for the public, one thing to know is that many of the key spaces—the Restoration zone spaces—are accessible and are proximate to one another: these include the C Street lobby, the auditorium and library, the Interior Museum, and most notably, the venerable Indian Craft Shop. Because one must go through a security gantlet to see them, the latter two are a staple on lists of "Secret Washington Attractions."

The work of the past 23 years not only made these amenities that much more appealing, it greatly improved the security process, too. Even after standards were dramatically tightened following 9/11, SBA was able to tuck the scanners and employee turnstiles in a secondary space off the lobby. One now enters the lobby, restored to its 1936 glory, without the distractions of modern security. It is a discrete little example of how SBA understood "modernization" in its best sense: improvement to both the architecture and the user experience.

Library Reading Room.

Photo © Ulf E. Wallin

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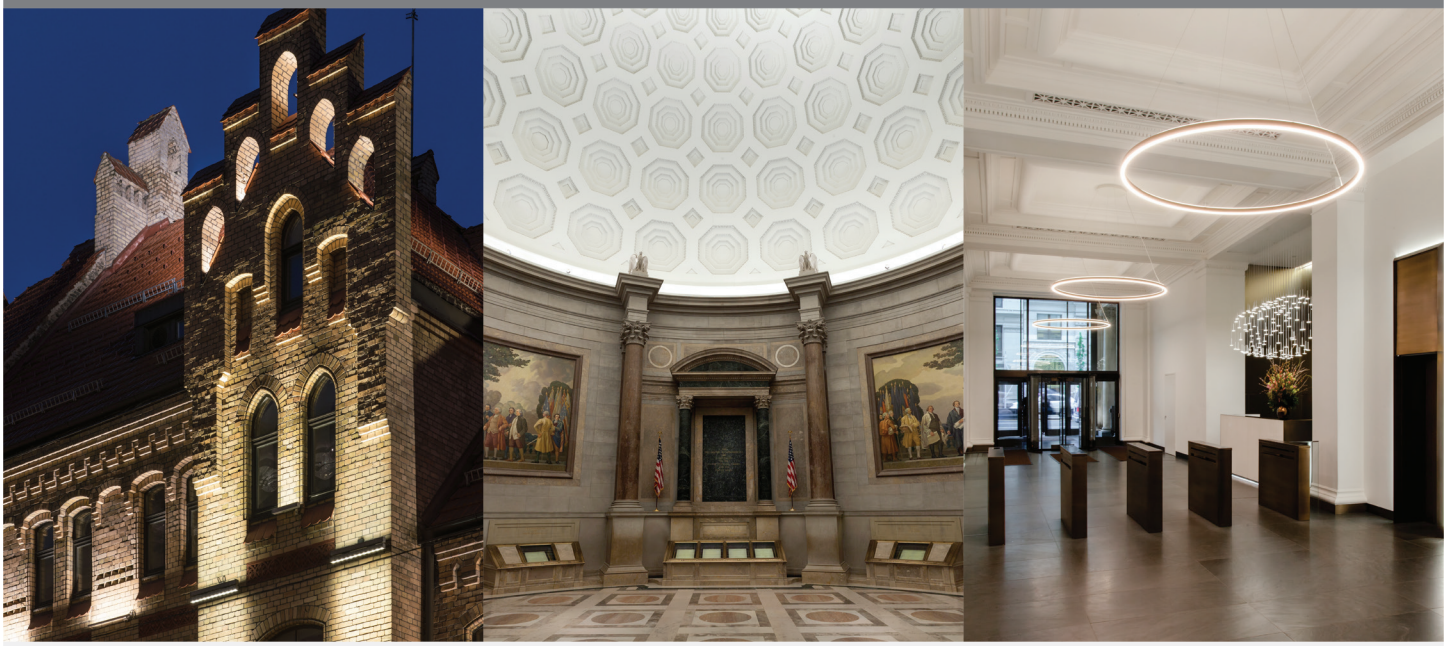

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Architect: Stephen Muse, FAIA
Photographer: Maxwell Mackenzie

Courtyard before renovation.
Courtesy of Cunningham | Quill Architects

Room(s) to Think

Dumbarton Oaks Upgrades its Off-Campus Housing

by G. Martin Moeller, Jr., Assoc. AIA

Side courtyard of the La Quercia Apartments. Note the lead masks, designed by Beatrix Farrand, hung on the wall.

All photos © Anice Hoachlander, except as noted

Street façade following renovation.

Project: La Quercia Apartments,
1619 30th Street, NW, Washington, DC

Architects/Interior Designers: **Cunningham | Quill Architects**
Landscape Architects: **Landscape Architecture Bureau**
Structural Engineers: **Keast & Hood**
(merged with Simpson Gumpertz & Heger)
MEP Engineers: **RYN Engineers**
Civil Engineers: **AMT**
Code Consultants: **Jensen Hughes**
Security/Low-Voltage Consultants: **Genesis Security Systems**
Commissioning: **Facility Dynamics Engineering**
General Contractor: **Consigli Construction**

Nestled in a leafy corner of Georgetown, seemingly oblivious to the bustle of commercial and governmental DC, the Dumbarton Oaks Research Library and Collection is an oasis of quiet and calm. Many Washingtonians—along with tourists willing to look beyond the more standard sights on and around the National Mall—know Dumbarton Oaks for its extensive gardens and its galleries displaying Byzantine and Pre-Columbian art. Few are aware of the institution's primary purpose, which is to provide a place for scholars in landscape, Byzantine, and Pre-Columbian studies to conduct advanced research.

Dumbarton Oaks owes its existence to Mildred Barnes Bliss and Robert Woods Bliss. Mildred Barnes inherited a fortune derived from her parents' investment in the wildly successful patent medicine Fletcher's Castoria. After her father died, her mother married William Bliss, an attorney and father of Robert Woods Bliss. Mildred and Robert thus became stepsiblings, but, not being related by blood, they later fell in love and married. As Robert pursued a successful career in the Foreign Service, the couple built a reputation as astute collectors and avid patrons of the visual and performing arts.

In 1920, the Blisses bought a large estate at the northern edge of Georgetown that had been owned by a succession of prominent figures. They combined two of the property's traditional names to call it Dumbarton Oaks. The couple oversaw a complete renovation of the main house and commissioned Beatrix Farrand to design the extensive gardens for which the property is now famous. In the late 1930s, they accelerated their art and book collecting and commissioned a new music room, library, and exhibition galleries.

Then, in 1940, the Blisses donated all of the buildings on the property along with their art collection, library, and most of the surrounding land to Harvard University. In doing so, they hoped to create "a quiet place where the advanced students and scholars could withdraw, the one to mellow and develop, the other to write the result of a life's study." Since becoming a part of Harvard, the Dumbarton Oaks campus has continued to develop. The most notable addition was the Pre-Columbian Collection Pavilion designed by Philip Johnson and completed in 1963.

Research fellows were initially housed on the main property, but as the institution grew in scope and importance, those facilities became inadequate. In 1994, Dumbarton Oaks bought an existing apartment building on nearby 30th Street to provide additional

Typical residential unit, with new built-in storage.

housing for fellows. The building was renamed La Quercia ("The Oak" in Italian), reflecting its role as a branch facility of the main campus.

By 2010, the La Quercia building, which was built in 1922 and had received only minor renovations over the ensuing decades, was due for a major overhaul. To accommodate fellows in the meantime, Dumbarton Oaks bought another building at the corner of Wisconsin Avenue and R Street, NW, and commissioned **Cunningham | Quill Architects** to oversee the renovation of the structure. After Fellowship House, as the new building was called, opened in 2014, the same firm was hired to lead the renovation of La Quercia into a modern residence for fellows, Harvard interns, and staff.

The existing building was cramped, mechanically outdated, and infused with a "Grandma's attic" smell, according to **David R. Coxson, AIA**, an associate at Cunningham | Quill. Worse, once demolition began, the design team discovered that the building's structure was in shockingly poor condition, with termite and water damage evident in floor joists and around the foundation walls. "The majority of the floors sloped in such a dramatic way," said Coxson, "that you [felt] like you were climbing uphill to get from one end of the unit to the other. In addition to the structure, the existing plaster walls and ceilings were cracked and separating from the lath, and ultimately very difficult to salvage."

Although those structural deficiencies would require substantial demolition and replacement, the architects decided that the basic plan of the building was still viable. Individual unit interiors were gutted and modernized, and thoughtfully designed built-in storage was added to make up for the lack of closet space. In response to the client's request for new common areas, the architects eliminated two "very uncomfortable" units on the lower level and converted the space into a lounge, laundry room, bicycle room, and general storage room.

The interiors of the 15 living units, lounge, and circulation areas reflect what might be described as a "warm modernist" aesthetic. In the units, oak millwork complements the existing oak flooring, much of which was salvaged, sanded, and re-stained. In the corridors, oak doors and surrounds, along with simple blocks of color in the carpeting, announce the entrances to individual units. New floor and wall tiles throughout are of bluestone and porcelain. Furnishings in the living units, which range from roughly 400 to 685 square feet, are simple, yet manage to seem far superior to their equivalents in typical college dorm rooms. The furniture in the lounge is decidedly elegant, evoking a high-end office or hotel reception area.

Perhaps the most significant changes to the building involved the replacement of all mechanical, electrical, and plumbing systems. "We learned during the feasibility study for this project that the energy

Living area and kitchen within an individual residential unit.

consumption for the Fellowship House with all 25 units fully occupied was far less that the existing La Quercia building unoccupied," noted Coxson, illustrating both the problems and opportunities that older buildings present in terms of energy use. The renovation included the installation of a highly-efficient variable refrigerant flow (VRF) system, which is designed to work only as hard as necessary to heat or cool the building to a desired level. A 36-panel solar array on the roof produces approximately 17,000 kWh per year (U.S. electricity consumption is currently roughly 4,500 kWh per capita per year). Thanks to these and other efforts, the project achieved LEED-CI v3.0 Gold certification, and meets Harvard's own stringent Green Building Standards, which apply to all capital projects over $100,000 undertaken by the university.

The renovation work included the two long, narrow courtyards running most of the length of the building on both sides, which were previously overgrown and disused. Working with the firm Landscape Architecture Bureau, the design team converted both of the semi-abandoned patios into attractive outdoor spaces. The northern courtyard was conceived as a contemplative garden, with a meandering bluestone path, soft plantings, and a series of architectural "follies." The southern courtyard was designed to accommodate small gatherings, with more extensive bluestone paving, wood lattice fencing, and moveable tables and chairs. Lining the wall along this courtyard are four lead masks, which were among those designed by Beatrix Farrand for some of the garden fountains on the Bliss property but never installed. The design team worked with the Dumbarton Oaks staff to bring these to La Quercia as a reminder of the connection between the satellite residential facility and the central campus a few blocks away.

As is often the case with renovations in historic districts, the street façade of this project bears few signs of the changes within. For residents, however, the dramatic transformation of La Quercia has yielded a comfortable and healthful living environment that will surely be more conducive to fruitful scholarship.

Residents' lounge.

Corridor before renovation.

Renovated corridor.

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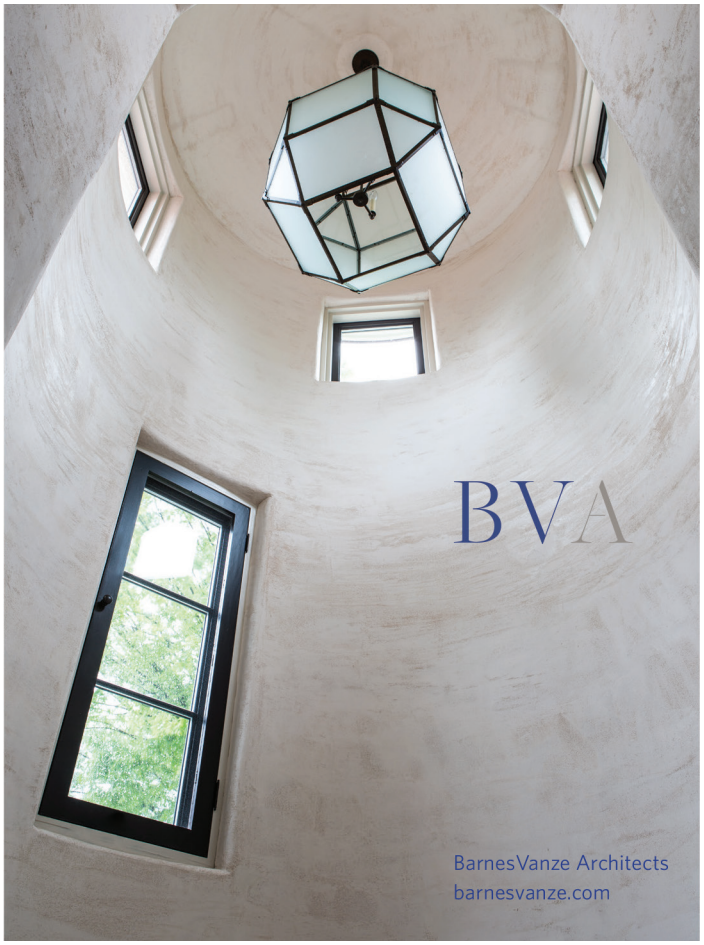

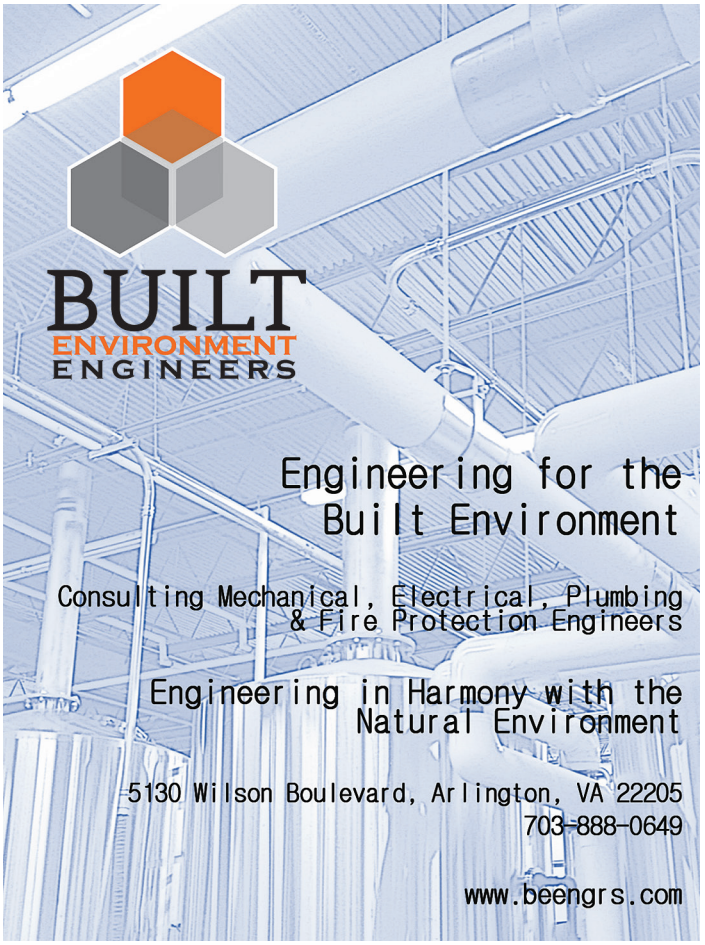

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Deep-sea-themed graphics in the Elsie & Marvin Dekelboum Family Foundation Molecular Imaging Center at Children's National Hospital.

Going Deep

Fighting Anxiety through Design in a Children's Medical Facility

by Louis Duva

All photos © Gaffer Photography, except as noted

Circulation space in the Molecular Imaging Center.

Project: Elsie & Marvin Dekelboum Family Foundation Molecular Imaging Center,
Children's National Hospital, 111 Michigan Avenue, NW, Washington, DC

Architects/Interior Architects: **HGA**
Structural Engineers: **Simpson Gumpertz & Heger**
MEP Engineers/Lighting Designers: **Leach Wallace Associates, Inc. (now part of WSP)**
General Contractor: **HITT Contracting Inc.**

How do you design a space knowing that its users are likely to be terrified while there?

In the past, the design of healthcare facilities has tended to be blandly practical, if not downright insensitive to the psychological well-being of patients and visitors alike. Over time, the hospital setting acquired a rightfully-earned stigma that reflects the stress and invasiveness of a visit. Children's hospitals, in particular, have often felt "awkward" at best—detailed with things like animated, grinning zoo animals stickered on the walls as a way to comfort patients who are frightened and confused—not to mention anxious parents who may be all too aware of the seriousness of the situation.

Medical advances and shifts in policy mean healthcare facilities must balance multiple pressures—from the need to accommodate quickly evolving biomedical technology and its required infrastructure, to industry consolidation, and an imperative to meet growing demand. To complicate matters, hospital managers are often also challenged by a scarcity of resources and—most notably in urban areas—real estate. To contend with this, leaders of the most recent wave of hospital renovations across the country have looked inward. They are adjusting to these conditions by expanding and enhancing facilities within their existing footprint.

Circulation space before renovation. Courtesy of HGA

The Elsie & Marvin Dekelboum Family Foundation Molecular Imaging Center occupies 5,251 square feet of renovated space on the second floor of the Children's National Hospital, part of the Medstar Health Campus adjacent to the VA Hospital just off North Capitol Street in DC. In contrast to the stereotypical somber labyrinth associated with hospitals,

Waiting/Art Room.

architecture firm **HGA** has delivered an immersive environment designed to provide positive distractions. Without sacrificing the functionality expected by hospital staff, the renovation reflects a more humanistic approach to the patient experience.

The project expands upon a previously completed phase of HGA's master plan for the hospital: the Pediatric Ultrasound Scanning Center (PULSE), which serves as the primary gateway through which patients enter the Molecular Imaging Center. For the earlier project, HGA had developed visual themes based on sea life. While such imagery may seem arbitrary, in fact there is a clever scientific connection between the graphics and the purpose of the facility. Ultrasound is not just a medical technology—it is also used by whales to communicate through the dense water of the deep ocean.

Molecular imaging involves the use of biomarkers—usually dyes—to observe molecular pathways inside the body. This technique inspired its own set of marine imagery based on bioluminescence—the process by which many deep-sea creatures create their own light. Expanding on the elemental connection the team had already made with PULSE's deep-sea references, "the bioluminescent theme was established from the start," explained project architect **Heidi McElroy**.

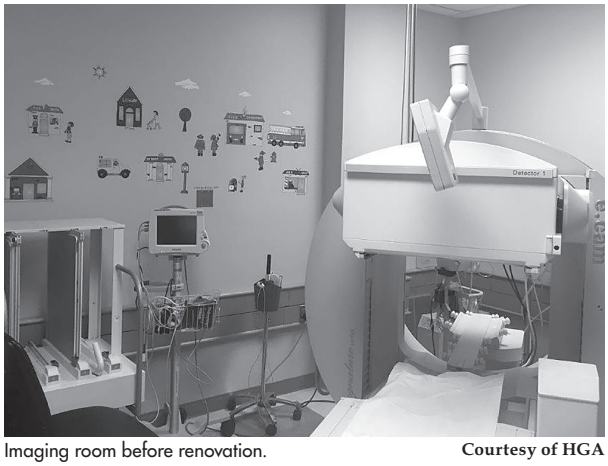
Responding to the vulnerability of its users, the design for the facility now serves to instill a sense of calm and otherworldliness—like a dream perhaps. Young patients respond to the simple graphics depicting deep-sea creatures, while more sophisticated scientific references engage adults. It doesn't look like a typical hospital space, but nor does it resemble an aquarium. The deep-water references are abstracted and rendered down to colors, outlines, and shadow-forms. Wayfinding and paths of travel have been simplified to contribute to a reduction of stress.

With the bioluminescence concept established, HGA focused on furthering the deep-sea theme through color, light, and movement. Framing the narrative of the patient experience, visitors *dive* into a bioluminescent world signaled not only by the deep-

Patient imaging room.

sea creature imagery but also the use of ascending and descending tones of blue as one moves deeper into the department (or deeper into the body). This architectural meta-narrative transports patients into another world psychologically before they physically enter the scanning devices. The design team was meticulous in developing details, like which shades of blue would be used and the rate of interactive features like pulsing lights, all of which underwent user testing.

The renovation of existing medical facilities is an emerging field of opportunity for architects. Constantly evolving technology means facilities need to be flexible and adaptable. Yet as tools and methods change, institutions are embracing philosophical advances in patient care, as well. For architects, design interventions will play a crucial role in providing solutions to the treatment of vulnerable populations (including children) through the design of sensitive environments.


Imaging room before renovation. **Courtesy of HGA**

HGA's design of the molecular imaging center embraces these changes. The firm has created a radically new kind of hospital experience that employs modern sociological tools like color therapy, engaging imagery, and tactile devices in a way that exploits the power of biophilic architecture to enhance human wellness.

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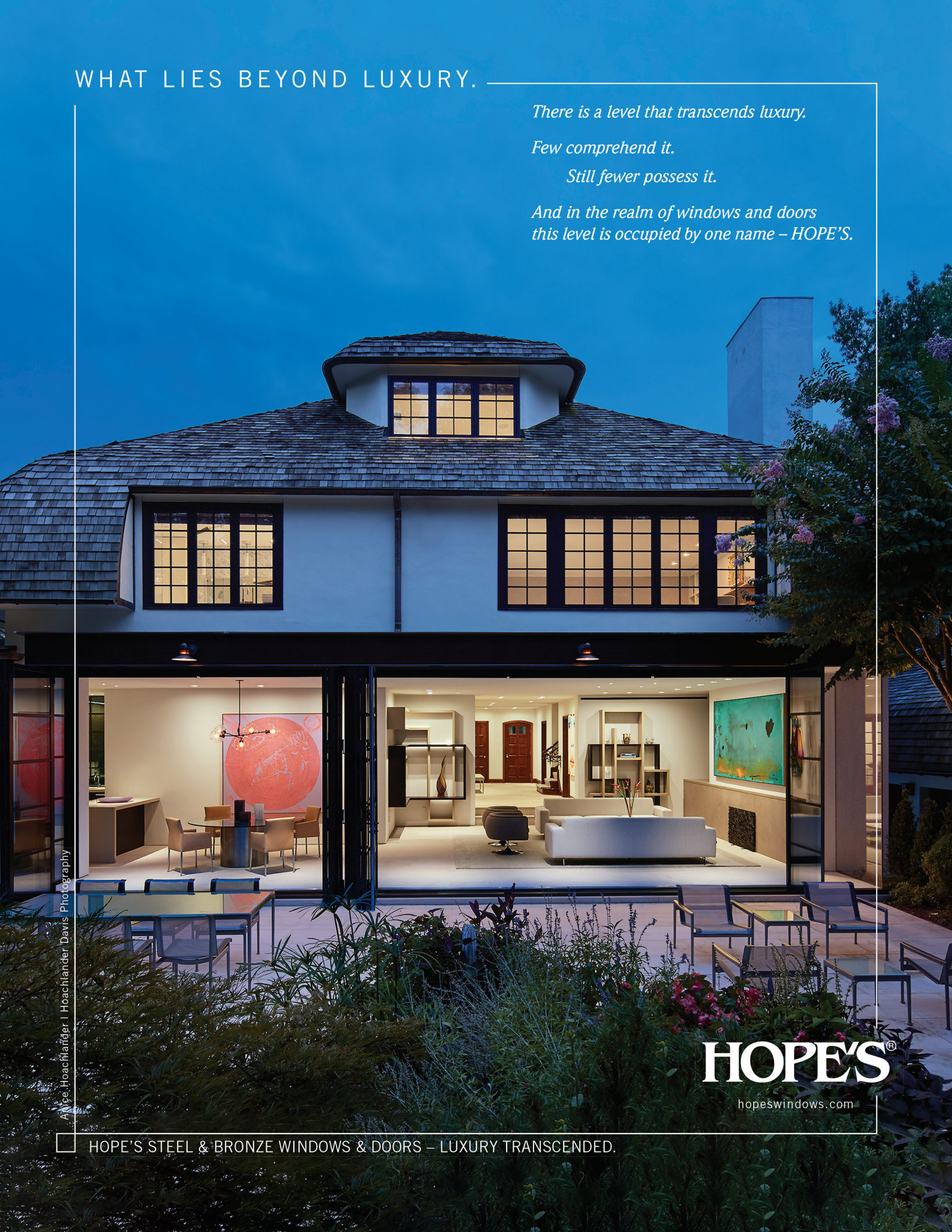

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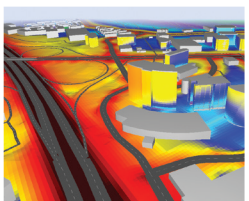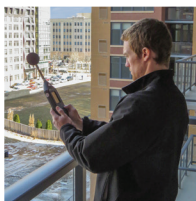
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